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Docket No.: 0230-0222PUS1  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Ichiro HIRAO et al.

✓ Application No.: 10/521,454

Confirmation No.: 8799

Filed: November 29, 2005

Art Unit: 1633

For: NUCLEOSIDE OR NUCLEOTIDES HAVING  
NOVEL UNNATURAL BASES AND USE  
THEREOF

Examiner: R. M. Kelly

**INFORMATION DISCLOSURE STATEMENT**  
**(SUBMISSION AFTER FILING OF AN APPLICATION BUT BEFORE FINAL**  
**REJECTION OR NOTICE OF ALLOWANCE OR CONCURRENTLY WITH A RULE**  
**1.114 RCE APPLICATION)**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. §§ 1.97 and 1.98, applicant(s) hereby submit(s) an Information Disclosure Statement for consideration by the Examiner.

I. LIST OF PATENTS, PUBLICATIONS OR OTHER INFORMATION

The patents, publications, or other information submitted for consideration by the Office are listed on the PTO-SB08(s), attached hereto.

II. COPIES

☒ a. Copies of cited U.S. patents and patent application publications are not included.  
Copies of foreign patent documents and non-patent literature are included.

☐ b. Some or all of the documents listed on the PTO-SB08 are not enclosed because they were cited in the International Search Report and copies should already be in the PTO file. If copies are needed, please contact the undersigned.

☐ c. REFERENCES PREVIOUSLY CITED OR SUBMITTED - Pursuant to 37 C.F.R. §1.98(d), consideration of information listed on the PTO-SB08 form(s) is requested since any patents, publications, or other information which are listed on the PTO-SB08 form(s) but for which copies are not enclosed herewith, were previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. § 120:

U.S. Appl. No(s) and U.S. Filing Date

III. CONCISE EXPLANATION OF THE RELEVANCE

(check at least one box)

☒ a. DOCUMENTS IN THE ENGLISH LANGUAGE - The patents, publications, or other information listed on the attached PTO SB08 are in the English language and therefore, do not require a statement of relevancy.

☐ b. DOCUMENTS NOT IN THE ENGLISH LANGUAGE - A concise explanation of the relevance of all patents, publications, or other information listed that is not in the English language is as follows:

☐ c. ENGLISH LANGUAGE SEARCH REPORT - An English language version of the search report or action that indicates the degree of relevance found by the foreign office is attached, thereby satisfying the requirement for a concise explanation. See MPEP 609(III)(A)(3).

☐ d. OTHER - The following additional information is provided for the Examiner's consideration.

IV. FEES (check one box)

☐ a. This Information Disclosure Statement is being filed concurrently with the filing of a new patent application; therefore, no fee is required.

☐ b. This Information Disclosure Statement is being filed concurrent with the filing of a continuation-in-part, continuation, or divisional patent application; therefore, no fee is required.

☐ c. This Information Disclosure Statement is being filed within three months of the filing date of a national application (37 C.F.R. § 1.97(b)(1)). No fee or statement is required.  
(This section is not to be used with RCE's.)

☐ d. This Information Disclosure Statement is being filed within three months of the date of entry of the national stage as set forth in § 1.491 in an international application (37 C.F.R. § 1.97(b)(2)). No fee or statement is required.

☐ e. This Information Disclosure Statement is being filed concurrently with the filing of a Request for Continued Examination under § 1.114 (37 C.F.R. § 1.97(b)(4)). No fee or statement is required.

☒ f. This Information Disclosure Statement is being filed before the mailing date of a first Action on the merits (37 C.F.R. § 1.97(b)(3)). No fee or statement is required. In the event that a first Office Action on the merits has been issued, please consider this IDS under 37 C.F.R. § 1.97(c) and see the statement under 37 C.F.R. § 1.97(e) below, or, if no statement has been made, charge our deposit account for the fee as required by 37 C.F.R. § 1.17(p).

☐ g. This Information Disclosure Statement is being filed before the mailing date of a Final Office Action under 37 C.F.R. § 1.113 (See 37 C.F.R. § 1.97(c)(1)) or before the mailing date of a Notice of Allowance under 37 C.F.R. § 1.311 (See 37 C.F.R. § 1.97(c)(2)).

☐ No statement; therefore, a fee as required by 37 C.F.R. § 1.17(p) is attached.  
or

☐ See the statement below. No fee is required.

V. STATEMENT UNDER 37 C.F.R. § 1.97(e)

(check only one box)

The undersigned hereby states that:

☐ a. **Each item of information contained in the IDS was first cited in any communication from a foreign Patent Office in a counterpart foreign application not more than 30 days prior to the filing of this IDS; or**

☐ b. Each item of information contained in the IDS was first cited in any communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of this IDS; or

☐ c. No item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of the IDS.

☐ d. Some of the items of information were cited in a communication from a foreign Patent Office. As to this information, the undersigned states that each item of information contained in the IDS was first cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby states that no item of this remaining information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application and, to the best of my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this statement.

VI. PAYMENT OF FEES (check one box)

☐ The required fee is listed on the attached Fee Transmittal.

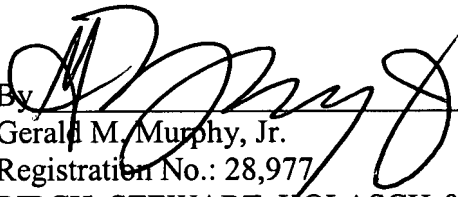
☒ No fee is required.

If the Examiner has any questions concerning this IDS, he/she is requested to contact the undersigned. If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule and charge the appropriate fee to Deposit Account No. 02-2448.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to our Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under § 1.17; particularly, extension of time fees.

Dated: June 16, 2007

Respectfully submitted,

  
By \_\_\_\_\_  
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Attachment(s):

- ☒ PTO/SB/08
- ☒ Document(s)
- ☐ Foreign Search Report(s)
- ☐ Fee
- ☒ Other: **List of Prior Art References**



Used in Lieu of PTO/SB/08A/B  
(Based on PTO 04-07 version)

<b>Substitute for form 1449/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	10/521,454-Conf. #8799
				Filing Date	November 29, 2005
				First Named Inventor	Ichiro HIRAO
				Art Unit	1633
				Examiner Name	R. M. Kelly
Sheet	1	of	2	Attorney Docket Number	0230-0222PUS1

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)	MM-DD-YYYY			

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language translation is attached.

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>	
	CA	BATTERSBY et al., J. Am. Chem. Soc., Vol. 121, (1999), pages 9781-9789		
	CB	CAMPBELL et al., Oncogene, Vol. 17, (1998), pages 1395-1413		
	CC	CHEN et al., Anal. Chem., Vol. 28, (1956), pages 1756-1758		
	CD	ELLINGTON et al., Nature, Vol. 346, (1990), pages 818-822.		
	CE	FANG et al., Anal. Chem., Vol. 73, (2001), pages 5752-5757.		
	CF	FUJIWARA et al., Bioorg. Med. Chem. Lett. Vol. 11, (2001), pages 2221-2223.		
	CG	GOLDEN et al., Journal of Biotechnology, Vol. 81, (2000), pages 167-178.		
	CH	HIRAO et al., J. Biol. Chem., Vol. 275, (2000), pages 4943-4948.		
	CI	HIRAO et al., Chem. Lett., (2001), pages 914-915.		
	CJ	HIRAO et al., Nature Biotechnol., Vol. 20, (2002), pages 177-182.		
	CK	INOUE et al., J. Biol. Chem., Vol. 275, (2000), pages 3737-3740.		
	CL	ISHIKAWA et al., Tetrahedron Letters, Vol. 41, (2000), pages 3931-3034.		
	CM	JENSEN et al., Proc. Natl. Acad. Sci. USA, Vol. 92, (1995), pages 12220-12224.		
	CN	JHAVERI et al., Nature Biotechnology, Vol. 18, (2000), pages 1293-1297.		
	CO	KOLCH, Biochem. J., Vol. 351, (2000), pages 289-305.		
	CP	KOYAMA et al., FEBS Letters, Vol. 380, (1996), pages 113-117.		
	CQ	LATHAM et al., Nucleic Acids Research, Vol. 22, (1994), pages 2817-2822.		
	CR	LUDWIG et al., J. Org. Chem., Vol. 54, (1989), pages 631-635.		
	CS	MATULIC-ADAMIC et al., Tetrahedron Letters, Vol. 38, (1997), pages 203-206.		
	CT	MEISENHEIMER et al., Crit. Rev. Biochem. Mol. Biol., Vol. 32, (1997), pages 101-140.		
	CU	MORALES et al., J. Am. Chem. Soc., Vol. 121, (1999), pages 2323-2324.		

Examiner Signature		Date Considered	
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Birch, Stewart, Kolasch & Birch, LLP

GMM/CAM/mat

GMM

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				First Named Inventor	Ichiro HIRAO
				Art Unit	1633
				Examiner Name	R. M. Kelly
Sheet	2	of	2	Attorney Docket Number	0230-0222PUS1

CV	OHTSUKI et al., Proc. Natl. Acad. Sci. USA, Vol. 98, (2001), pages 4922-4925.	
CW	PICCIRILLI et al., Nature, Vol. 343, (1990), pages 33-37.	
CX	PICCIRILLI et al., Biochemistry, Vol. 30, (1991), pages 10350-10356.	
CY	RAPP et al., Cold Spring Harb. Symp. Quant. Biol., Vol. 53, (1988), pages 173-184.	
CZ	SWITZER et al., Biochemistry, Vol. 32, (1993), pages 10489-10496.	
CA1	TAE et al., J. Am. Chem. Soc., Vol. 123, (2001), pages 7439-7440.	
CB1	WU et al., J. Am. Chem. Soc., Vol. 122, (2000), pages 7621-7632.	
CC1	YAMAMOTO et al., Genes to Cells, Vol. 5, (2000), pages 389-396.	
CD1	BROEKMAN et al., Recueil, Vol. 81, (1962), pages 107-111.	
CE1	GOTT et al., Biochemistry, Vol. 30, (1991), pages 6290-6295.	
CF1	PETACH et al., Current Opinion in Biotechnology, Vol. 13, (2002), pages 309-314.	
CG1	BRODY et al., Molecular Diagnosis, Vol. 4, (1999), pages 381-388.	
CH1	THEISSEN et al., Anal. Biochem., Vol 179, (1989), pages 98-105.	
CI1	BELLINZONI et al., Mol. Cell. Probes, Vol. 3, (1989), pages 233-244.	
CJ1	LANGER et al., Proc. Natl. Acad. Sci. USA, Vol. 78, (1981), pages 6633-6637.	
CK1	RUBY et al., Methods in Enzymology, Vol. 181, (1990), pages 97-121.	
CL1	HUANG et al., RNA, Vol. 9, (2003), pages 1562-1570.	

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

*GMM*

Examiner Signature		Date Considered	
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